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### **Peripheral Arterial Disease Patients with Exaggerated Pressor Response have Impaired Walking Ability.**

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Exaggerated blood pressure responses to exercise in peripheral artery disease (PAD) patients suggests hemodynamic instability with a greater chance of major adverse cerebrovascular and cardiac events. Furthermore, a decline in blood pressure response is abnormal and indicates that the patient is potentially at a greater risk of experiencing a cardiac event. However, it is unclear whether the degree of pressor response is associated with impaired ambulation and more comorbid conditions. **PURPOSE:** To determine whether PAD patients who have a negative pressor response and exaggerated pressor response during treadmill walking have shorter peak walking time (PWT), shorter claudication onset time (COT), and higher prevalence of comorbid conditions than patients with a normal pressor response. **METHODS:** A total of 298 claudication patients were categorized to the following three groups based on their systolic blood pressure (SBP) responses at 2 minutes of treadmill walking at 2 mph and 0% grade: negative pressor response (group 1, defined by a decrease in exercise SBP), normal pressor response (group 2, defined by an exercise SBP increase of less than 18 mmHg), and exaggerated pressor response (group 3, defined by an exercise SBP increase of more than 18 mmHg). The patients were characterized by demographic variables, comorbid conditions, PWT, and COT. **RESULTS:** After adjusting for age, body mass index, ankle-brachial index, 6 min walk distance, sex, and race, group 3 had significantly reduced COT ( $161 \pm 132$  sec vs.  $217 \pm 172$  sec,  $p=0.011$ ) and PWT ( $369 \pm 214$  sec vs.  $453 \pm 252$  sec,  $p=0.002$ ) compared to group 2. Furthermore, group 3 had fewer patients with dyslipidemia ( $p<0.001$ ), metabolic syndrome ( $p<0.001$ ), and chronic kidney diseases ( $p=0.043$ ) compared to group 2. In contrast, no significant differences ( $p>0.05$ ) were found between group 1 and group 2. **CONCLUSION:** These data suggest that although symptomatic PAD patients with exaggerated pressor response are less likely to have comorbidities, they experience claudication earlier and have impaired walking ability compared to PAD patients with a normal pressor response. Also, PAD patients with negative pressor response are not different from PAD patients with normal pressor response on walking performance and prevalence of comorbid conditions.

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